

SUBSTITUTED ABSTRACT

Please delete the existing Abstract in its entirety and substitute therefore the following:

-- A system and method for determining from an arbitrary signal a characteristic signature or other characterizing feature and for distinguishing signals associated with one specific condition from those associated with one or more other conditions. The system uses dictionaries of plural sets of basis signal elements, for example, combinations of orthogonal bases with different characteristics. It optimizes the fit of part of an arbitrary signal to one or more elements of one class of basis signals from a dictionary and iteratively fits the remainder of the arbitrary signal to elements of an optimal class of basis signals, either the original or a different class depending on the goodness of match between the residual part of the signal and the subsequent basis class. --